U.S. Department of the Interior
Bureau of Land Management
Cadastral Survey

BLM

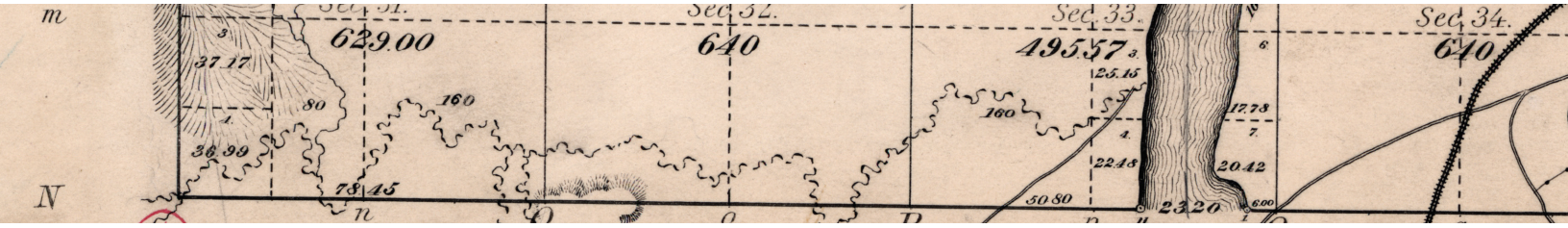
Management of Land Boundaries

"Absolutely fundamental to orderly, systematic land management is to know with a degree of certainty the boundaries of the lands being managed. Every aspect of the Bureau of Land Management's mission and programs relies on legally defined land boundaries. A report by the Office of Inspector General recognized this and identified the need for greater collaboration among all our programs and disciplines in determining the land boundary assessment needs across the BLM. I encourage all BLM employees, especially those involved in processing and approving high-value realty transactions, to take the opportunity to use the information in this brochure as a resource for learning more about the boundaries that affect the federal interest lands you manage."

– Bob Abbey, BLM Director

About the Bureau of Land Management

The Bureau of Land Management (BLM), within the Department of the Interior (DOI), manages more than 245 million acres of public land primarily located in 12 western states, including Alaska. The bureau also administers 700 million acres of subsurface mineral estate throughout the nation. The BLM's multiple-use mission is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. The bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production and by conserving natural, historical, cultural, and other resources on public lands.



History of the Cadastral Program

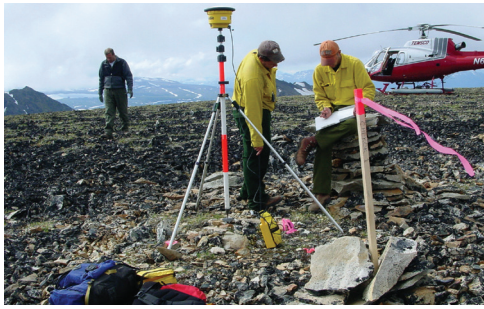
The "rectangular survey system" was first proposed by Thomas Jefferson and enacted into law by the Land Ordinance of 1785. The Land Ordinance provided the basis for the Public Land Survey System (PLSS), which is a way of subdividing and describing land, mainly in the Western United States. To handle the rapidly increasing surveys, public land sales, patents, and land entries, Congress created the General Land Office in 1812.

The BLM assumed responsibility for the cadastral efforts of the early United States in 1946, when the merger of the General Land Office and Grazing Service formed the BLM. Today, the BLM maintains the official records of more than 200 years' worth of title and cadastral survey records. The bureau performs new surveys, mostly in Alaska and Arizona, and also conducts resurveys. It is important to resurvey land to restore obliterated or lost survey corners and to enhance the management of all federal and tribal lands. Cadastral surveys create, restore, mark, and define boundaries and subdivisions of land.

The Cadastral Program's Customers

The BLM cadastral survey program surveys federal interest lands, which are located in all 50 states in rural or metropolitan areas. Customers include all federal land management agencies, such as the Bureau of Indian Affairs (BIA), Bureau of Reclamation, Department of Defense, Department of Energy, National Park Service, Office of Surface Mining Reclamation and Enforcement, U.S. Fish and Wildlife Service, and U.S. Forest Service. By regulation, cadastral surveys can also be conducted for nonfederal entities.

How Does the Cadastral Program Help Customers?



The primary mission of the BLM cadastral survey program is the establishment and preservation of the PLSS and boundary determination of federal interest lands. An official survey by the BLM is binding on all governmental officials and cannot be changed except by the BLM or a higher jurisdiction. Cadastral surveys are the foundation for land title records and provide federal, tribal, and Alaska Native Corporation land managers with information necessary for the management of their lands.

- The cadastral survey program provides direct support to the BLM's fire, forestry, law enforcement, mineral, realty, special area, and recreation programs.
- The cadastral survey program assists federal, tribal, and Alaska Native land management agencies by interpreting and analyzing survey plats, locating boundary markers in the field, and performing new and retracement cadastral surveys when necessary evidence can be done by the standards for boundary evidence certificate process, instead of having a full survey.
- Other services involve surveys to assist in: the resolution of trespass upon public lands, defining the boundaries of timber sales, rights-of-way, leasing lands to local communities under the Recreation and Public Purposes Act, identifying boundaries of lands to be exchanged or sold, and identifying boundaries of wilderness and other special areas.
- Consultation services provide clarification to common misconceptions about boundary and title issues. **Some common misconceptions are:**
  - Unwritten rights cannot impact acquired federal interest lands
  - A deed description that mathematically closes is a sign of a good title or boundaries free from conflict
  - Vested, third-party rights may not affect uses of land
  - Effects of water movement have no impact on land ownership and/or boundary lines
  - The use of geographic information systems (GIS) that are not measurement-based provide accurate boundaries
- Furthermore, the cadastral survey program provides services for the BIA, Office of the Special Trustee for American Indians, tribes, individual Native Americans, Alaska Natives, and native corporations.

Specific Examples for Contacting the BLM Cadastral Survey Program

1) BLM cadastral surveyors are trained to help when a manager, program lead, or neighbor of federal interest land needs an answer regarding survey records or surveying principles. Oftentimes, a 15-minute consultation can avoid unnecessary disputes and enable immediate implementation of a transaction or project.

2) In coal and oil and gas country, the value of the minerals obliges the federal government to assure lease operators do not exceed the bounds of their lease. The BLM cadastral survey program provides advice to managers, program leads, and lease operators on management of lease boundaries.

3) In timber country, the value of the timber obliges the federal government to conduct sale of timber to marked property boundaries. The BLM cadastral survey program will advise the manager, program lead, and neighbors of options to obtain the necessary assurances that timber is managed to the limits of the federal interest, with no waste or trespass.

4) For areas with extensive obliteration of survey evidence, or where the evidence is subject to more than one interpretation, managers and program leads are advised to consult with a member of the cadastral survey program.

5) Anytime there is a likelihood of litigation that involves a boundary location conflict, consultation with a member of the cadastral survey program should be scheduled. If an official survey is needed, the BLM will defend the survey; the survey is an official decision; the survey cannot be overturned except by another official survey or a higher authority; the survey is binding on all department officers; and the survey is often given deference by the courts.

6) The BLM cadastral survey program can assist tribes and individual Native Americans with standards for boundary evidence certificates and official surveys for fee to trust transactions. To prevent boundary problems, a BIA official can submit a request for a boundary evidence certificate or survey to the BLM. In most cases, the cost is minimal in comparison to potential economic benefits for individual and tribal development.

The General Land Office marked and set the above corner stones in the summer of 1882. Many years later, a nonfederal landowner did not know the actual significance of the stones and moved them while installing a driveway. The driveway encroached upon federal land. This situation could have been prevented if the managers of the federal land had been proactive in management of land boundaries, such as asking the cadastral survey program to update the corner stones bordering their land into more recognizable monuments.

In the two situations above, structures were built on federal land by adjacent nonfederal landowners. These situations could have been prevented if the federal land managers had been proactive in management of land boundaries, such as prioritizing boundary survey operations for potential development by adjoiners. Also, if the federal land managers had contacted the cadastral survey program to officially mark and post their land, the boundaries would have been more noticeable and clear to the nonfederal landowners.

Updated Procedures

Effective as of October 2007, the objectives of the DOI Departmental Manual, Part 303, Chapter 7, titled "Standards for Indian Trust Lands Boundary Evidence," are to:

- Provide a consistent, timely, efficient, and economical assessment of the need for boundary evidence relative to Indian trust assets.
- Permit expeditious processing of Indian trust asset transactions.
- Provide managers with a cost- and time-saving tool that assists them in making appropriate determinations for solutions to Indian trust asset boundary issues.
- Protect and preserve Indian trust assets from boundary conflicts, trespass, unauthorized use, and ambiguous land descriptions.
- Properly discharge the Secretary of the Interior's trust responsibilities as to Indian trust assets with a high degree of proficiency, integrity, and care.

In addition, a 2011 BLM instruction memorandum (IM No. 2011-122), titled "Plan to Ensure Adequate Cadastral Survey Review of Boundary Evidence Prior to the Approval of Significant Land and Resource Transactions and Commercial Projects," emphasizes less costly and less time-consuming cadastral services for public land managers. In lieu of an official survey, a boundary evidence assessment can be completed at substantially less cost, thus providing additional funds for land, resources, and project management. Standards for boundary evidence certificates include land description reviews, chain of surveys, certificates of inspection and possession, and boundary assurance certificates.

Some examples of high-market or nonmarket value transactions and projects are:

- Sites proposed for renewable energy leases involving significant investment and capital improvements
- The disposal of high-valued resources such as timber and minerals
- The management of high resource value treasured landscapes

Standards for boundary evidence assessments should be conducted when high-risk lands adjoin a high-risk boundary (i.e., a boundary not clearly marked on the ground by an official survey). These assessments are a low-cost, quick process to minimize unintended encroachments. The final decision to proceed with transactions and commercial projects will still remain with the authorized officer.

In 2006, the BLM launched the Certified Federal Surveyors (CFedS) program, designed to train state-registered professional land surveyors to perform land boundary surveys to federal standards. To date, more than 500 surveyors across the nation have become certified, and many have extensive experience working with the standards for Indian trust lands boundary evidence. To find a CFedS in your area, go to www.cfeds.org.

The above site wasn't thoroughly examined before the government purchased it. If the cadastral survey program would have been contacted prior to the acquisition or exchange of this land, they could have used the standards for boundary evidence certificate process. This would have saved the government hundreds of thousands of dollars in dealing with the acquired land's condition. A standards for boundary evidence certificate is a tool used to detect the condition of the land and the types of problems that title standards and title insurance will often not detect. Federal land managers must be aware of all encumbrances on property, which can be determined by the cadastral survey program, before acquiring the property.

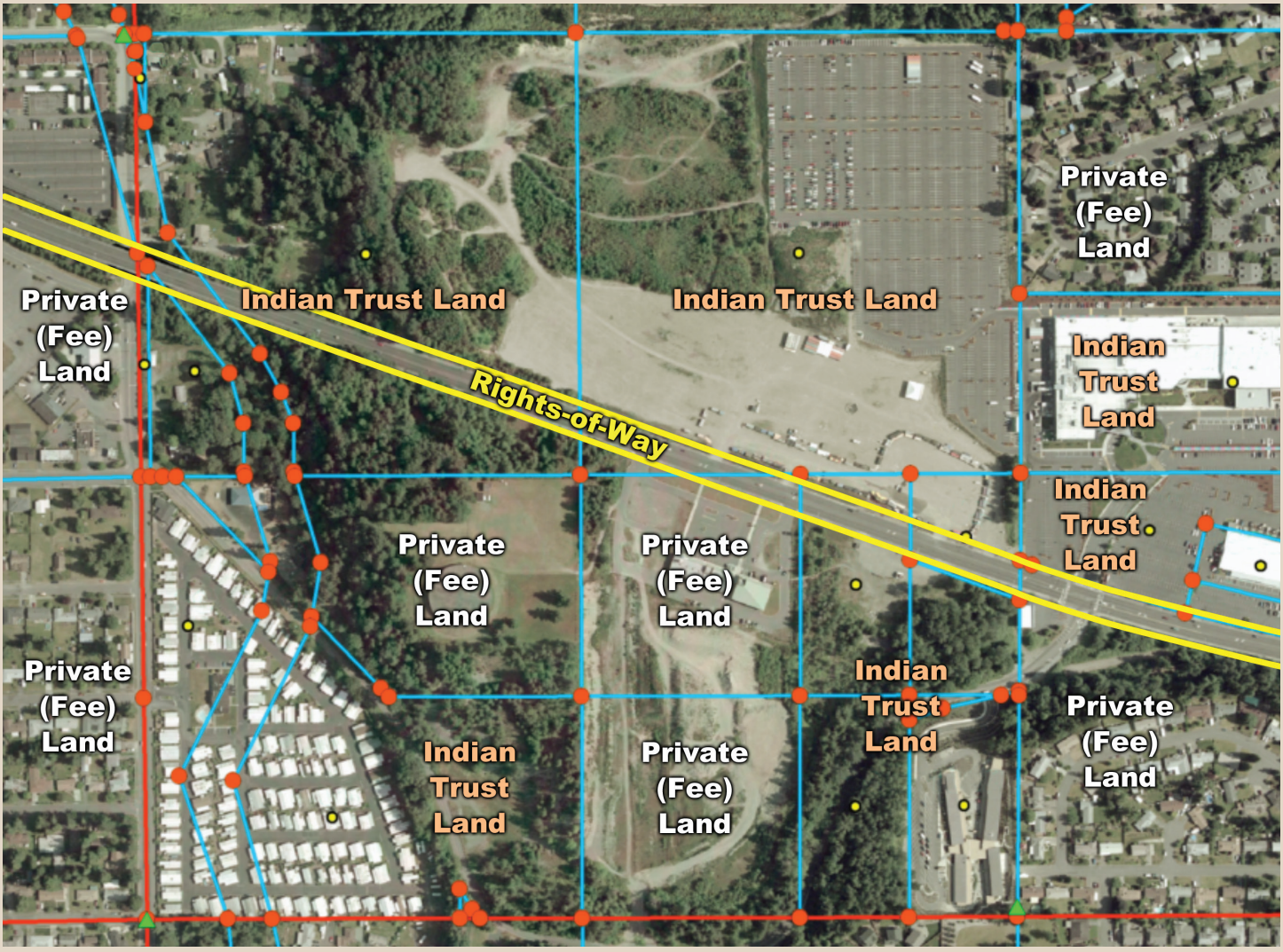
The stone in the foreground is a boundary corner, and the mound of stones is an accessory to the corner. Some federal land managers are unaware of these boundary markers. If these corners are lost or disturbed, they can cost thousands of dollars each for replacement. The cadastral survey program can replace less recognizable boundary corners with a more easily identifiable monument, which clearly marks the boundary line.

The first surveyors had to be creative with the materials they used to mark corners. Many times they used stones and wooden posts. Now, the cadastral survey program updates old corners with monuments similar to the one shown above. Current monuments are made out of a 28-inch long stainless steel pipe with a 3-inch diameter brass cap, which is more noticeable and harder to remove than early corner materials.

Contacting BLM Cadastral Survey

For cadastral survey assistance, contact the BLM state office chief cadastral surveyor within the jurisdiction where the land is located. If the land is a tribal trust, restricted fee, fee to trust transaction, or candidate for a fee to trust transaction, contact the BLM Indian lands surveyor assigned to the BIA regional office where the land is located.

Contact information for chief cadastral surveyors, BLM Indian lands surveyors, and other helpful information can be found at www.blm.gov/cadastral.



In the past, the federal interest land shown above was a wild land setting, but it has been developed into an urban setting with many different boundaries and uses. The cadastral survey program can help land managers maintain boundaries, review rights-of-way documents, and help with the location of utility corridors.